

TRANSMITTAL LETTER TO THE UNITED STATES

DESIGNATED/ELECTED OFFICE (DO/EO/US)

CONCERNING A FILING UNDER 35 U.S.C. 371

294-106 PCT/US

U.S. APPLICATION NO. (IF KNOWN, SEE 37 CFR

09/913906

INTERNATIONAL APPLICATION NO.

PCT/NL00/00105

INTERNATIONAL FILING DATE

18 February 2000

PRIORITY DATE CLAIMED

18 February 1999

TITLE OF INVENTION

Storage Device Having Protective Means

APPLICANT(S) FOR DO/EO/US

Henk HOOGLAND and Joannes Hermanus HEILIGERS

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☐ This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (24) indicated below.
4. ☒ The US has been elected by the expiration of 19 months from the priority date (Article 31).
5. ☒ A copy of the International Application as filed (35 U.S.C. 371 (c) (2))
 - a. ☐ is attached hereto (required only if not communicated by the International Bureau).
 - b. ☒ has been communicated by the International Bureau.
 - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☐ An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)).
 - a. ☐ is attached hereto.
 - b. ☐ has been previously submitted under 35 U.S.C. 154(d)(4).
7. ☒ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371 (c)(3))
 - a. ☐ are attached hereto (required only if not communicated by the International Bureau).
 - b. ☐ have been communicated by the International Bureau.
 - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
 - d. ☒ have not been made and will not be made.
8. ☐ An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☐ An oath or declaration of the inventor(s) (35 U.S.C. 371 (c)(4)).
10. ☐ An English language translation of the annexes of the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371 (c)(5)).
11. ☒ A copy of the International Preliminary Examination Report (PCT/IPEA/409).
12. ☒ A copy of the International Search Report (PCT/ISA/210).

Items 13 to 20 below concern document(s) or information included:

13. ☐ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
14. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
15. ☐ A **FIRST** preliminary amendment.
16. ☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
17. ☐ A substitute specification.
18. ☐ A change of power of attorney and/or address letter.
19. ☐ A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 35 U.S.C. 1.821 - 1.825.
20. ☒ A second copy of the published international application under 35 U.S.C. 154(d)(4).
21. ☐ A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4).
22. ☒ Certificate of Mailing by Express Mail
23. ☒ Other items or information:

Annexes are attached to the International Preliminary Examination Report (English language).

EXPRESS MAIL CERTIFICATE

Date 17 Aug 2001 Label No. EL92209966445
I hereby certify that on the date indicated above, I
deposited this paper or fee with the U.S. Postal Service &
that it was addressed for delivery to the Assistant

09/913906

PCT/NL00/00105

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24. The following fees are submitted..

CALCULATIONS PTO USE ONLY

BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)) :

- ☐ Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO **\$1000.00**
- ☒ International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO **\$860.00**
- ☐ International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO **\$710.00**
- ☐ International preliminary examination fee (37 CFR 1.482) paid to USPTO but all claims did not satisfy provisions of PCT Article 33(1)-(4) **\$690.00**
- ☐ International preliminary examination fee (37 CFR 1.482) paid to USPTO and all claims satisfied provisions of PCT Article 33(1)-(4) **\$100.00**

ENTER APPROPRIATE BASIC FEE AMOUNT =**\$860.00**

Surcharge of **\$130.00** for furnishing the oath or declaration later than ☐ 20 ☐ 30 months from the earliest claimed priority date (37 CFR 1.492 (e)).

\$0.00

CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE		
Total claims	41 - 20 =	21	x \$18.00	\$378.00	
Independent claims	2 - 3 =	0	x \$80.00	\$0.00	
Multiple Dependent Claims (check if applicable).			<input checked="" type="checkbox"/>	\$270.00	

TOTAL OF ABOVE CALCULATIONS =**\$1,508.00**

- ☒ Applicant claims small entity status. (See 37 CFR 1.27). The fees indicated above are reduced by 1/2.

\$754.00**SUBTOTAL =****\$754.00**

Processing fee of **\$130.00** for furnishing the English translation later than ☐ 20 ☐ 30 months from the earliest claimed priority date (37 CFR 1.492 (f)).

\$0.00**TOTAL NATIONAL FEE =****\$754.00**

Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31) (check if applicable).

\$0.00**TOTAL FEES ENCLOSED =****\$754.00**

Amount to be:	\$
refunded	
charged	\$

- a. ☒ A check in the amount of **\$754.00** to cover the above fees is enclosed.
- b. ☐ Please charge my Deposit Account No. _____ in the amount of _____ to cover the above fees. A duplicate copy of this sheet is enclosed.
- c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. **08-2461**. A duplicate copy of this sheet is enclosed.
- d. ☐ Fees are to be charged to a credit card. **WARNING:** Information on this form may become public. **Credit card information should not be included on this form.** Provide credit card information and authorization on PTO-2038.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

Ronald J. Baron, Esq.
Hoffmann & Baron, LLP
6900 Jericho Turnpike
Syosset, New York 11791

Telephone: 516-822-3550
Facsimile: 516-822-3582

SIGNATURE

Ronald J. Baron

NAME

29,281

REGISTRATION NUMBER

17 August 2001

DATE

PTO/PCT 09 OCT 2001

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Hoogland, et al.

Examiner: Unassigned

Serial No.: 09/913,906

Group Art Unit: Unassigned

Filed: August 17, 2001

Docket: 294-106 PCT/US

For: STORAGE DEVICE HAVING
PROTECTIVE MEANS

Dated: October 4, 2001

Commissioner for Patents
Washington, DC 20231

*I hereby certify this correspondence is being
deposited with the United States Postal Service as
first class mail, postpaid in an envelope,
addressed to:*

Commissioner for Patents, Washington, D.C.

20231 on October 4, 2001

Signature:

Julie L. Watts

3/a
JL
E. Watts
5/7/02

PRELIMINARY AMENDMENT

Sir:

Applicants respectfully request entry of this Amendment prior to examination in the above-identified patent application.

IN THE CLAIMS:

Please amend Claims 4, 6, 7, 9, 10, 12-19, 21, 24-28, 30, 31, 32, 34 and 37 to read as follows:

a --4. (Amended) A storage device (1, 50, 70, 120) according to claim 1, wherein the protective means (35, 123, 38, 38A, 36, 37) at least comprise magnetic or electronically readable means (38, 38A), which are preferably substantially entirely surrounded by the material of the storage device (1, 50, 70, 120).--

a 2 --6. (Amended) A storage device (1, 50, 70, 120) according to claim 1, comprise sealing means, for which purpose at least one cover part is provided with a number of lip-shaped sealing elements, while when the storage device (1, 50, 70, 120) is closed, the or

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each sealing element is moveable by at least a portion of its surface against the outer side of the other cover part and can be fixedly connected thereto, preferably through at least partial fusion, the arrangement being such that the data carrier (2) disposed in the storage device (1, 50, 70, 120) cannot be removed therefrom without breaking the sealing means.--

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--7. (Amended) A storage device (1, 50, 70, 120) according to claim 1, wherein the protective means (35, 123, 38, 38A, 36, 37) comprise projections (25) provided on at least a cover part and corresponding openings (24) in the opposite cover part, such that when the storage device (1, 50, 70, 120) is closed, the projections (25) project through the openings (24) outside the outer side of the relevant cover part comprising the openings (24), the projecting projection parts that extend outside the cover part being deformable in such a matter, for instance through heat, that the projections (25) cannot be withdrawn from the openings (24) out removal of at least a part of the projecting parts and/or damaging the projections (25) and/or cover parts (3, 5) otherwise.--

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--9. (Amended) A storage device (1, 50, 70, 120) according to claim 7, wherein each cover part is provided with a raised longitudinal edge, said longitudinal edges, when the storage device (1, 50, 70, 120) is closed, abutting against each other, the projections (25) and openings (24) being provided in or at least adjacent the area of the longitudinal edges.--

--10. (Amended) A storage device (1, 50, 70, 120) according to claim 1, wherein the protective means (35, 123, 38, 38A, 36, 37) comprise at least one strip-shaped or band-shaped element (40) which, after closing the storage device (1, 50, 70, 120), is arranged so as to overlap at least a part of a seam between the first and the second cover part, and which is secured against the two cover parts (3, 5).--

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a
--12. (Amended) A storage device (1, 50, 70, 120) according to claim 1, wherein the protective means (35, 123, 38, 38A, 36, 37) comprise at least one holographic or

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comparable image (37) which is integrally injection molded in or on, or at least with the storage device (1, 50, 70, 120). --

--13. (Amended) A storage device (1, 50, 70, 120) according to claim 1, wherein the protective means (35, 123, 38, 38A, 36, 37) comprise at least one bar-code (36).--

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--14. (Amended) A storage device (1, 50, 70, 120) according to claim 1, wherein the protective means (35, 123, 38, 38A, 36, 37) comprise sealing means provided on or against the fixing means (13, 15, 16, 17, 31, 100), the arrangement being such that a data carrier (2) placed in the storage device (1, 50, 70, 120) cannot be removed therefrom without breaking the sealing means.--

--15. (Amended) A storage device (1, 50, 70, 120) according to claim 1, wherein on the side remote from a back part (4) and the pivots, the two cover parts (3, 5) are provided with cooperating closing means.--

--16. (Amended) A storage device (1, 50, 70, 120) according to claim 1, wherein the storage device (1, 50, 70, 120) is manufactured through injection molding from a plastic having a melt higher than 20, preferably higher than 30, in particular higher than 40 and even more in particular about 50.--

--17. (Amended) A storage device (1, 50, 70, 120) according to claim 1, wherein the storage device (1, 50, 70, 120) is injection molded in one piece, preferably at least substantially from clear polypropylene or a like plastic suitable for forming integrally injection molded pivots.--

--18. (Amended) A storage device (1, 50, 70, 120) according to claim 1, wherein the storage (1, 50, 70, 120) device is manufactured from clear, transparent plastic and wherein

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a preferably at least partially transparent printing (35, 123) is provided, said printing (35, 123) being at least partially visible from two opposite sides of a printed part of the device.--

ay --19. (Amended) A method for manufacturing a storage device (1, 50, 70, 120) for plate-shaped data carriers, said storage device having a first and a second cover pivotally connected, a fixing means for fixing the data carrier within the storage device, said storage device being injection molded from plastic, and a protective means, comprising placing protective means (35, 123, 38, 38A, 36, 37) in a mold and subsequently forming at least a portion of the storage device (1, 50, 70, 120) against or around the protective means (35, 123, 38, 38A, 36, 37) in the mold (101), preferably through injection molding, such that the protective means (35, 123, 38, 38A, 36, 37) cannot be removed from the relevant part without damage, characterized in that product information of a data carrier (2) to be stored in said storage device (1, 50, 70, 120) is being incorporated in said protective means (35, 123, 38, 38A, 36, 37).--

as --21. (Amended) A method according to claim 19, wherein a printing (23, 123) is provided in the mold (101), whereupon plastic in the mold (101) is provided against the printing (35, 123) or a carrier carrying the printing (35, 123), such that the printing (35, 123) will form an integral part of the storage device (1, 50, 70, 120) or a part thereof to be formed in the mold (101).--

--24. (Amended) A method according to claim 22, wherein the carrier is slightly stretched before or during placement in the mold (101), such that it is pulled taut.--

ab --25. (Amended) A method according to claim 22, wherein such a carrier is applied that under the influence of at least the temperature of the plastic provided thereagainst, it burns or sublimes, while the printing (35, 123) is incorporated on or into the plastic.--

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--26. (Amended) A method according to claim 22, wherein the carrier fuses with the plastic.--

--27. (Amended) A method according to claim 22, wherein the carrier with printing (35, 123) is supplied as a strip, in particular from a roll, and is cut directly before or during placement.--

--28. (Amended) A method according to claim 21, wherein the printing (35, 123) is designed as transfer.--

--30. (Amended) A method according to claim 21, wherein a holographic printing (35, 123) is provided.--

--31. (Amended) A method according to claim 21, wherein a bar-code (36) or the like is provided.--

--32. (Amended) A method according to claim 21, wherein a carrier is provided in the mold (101), having a printing (35, 123) on two sides, the plastic being provided against the carrier and undetachably connected thereto.--

--34. (Amended) A method according to claim 19, wherein the protective means (35, 123, 38, 38a, 36, 37) comprise magnetic and/or electronic means which are positioned on a carrier in the mold (101), whereupon plastic is squirted around the magnetic and/or electronic means, such that the carrier is enclosed or incorporated therein or disappears therein, for instance through burning or sublimation.--

--37. (Amended) A method according to claim 35, wherein the or each strip-shaped or band-shaped element (40) is cut from a continuous strip of plastic directly prior to or during attachment against the storage device (1, 50, 70, 120).--

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Please cancel Claim 38 without prejudice and substitute therefor Claims 39 and 40 as follows:

--39. An apparatus for manufacturing a storage device for plate shaped data carriers, said storage device having a first and second cover pivotally connected, a fixing means for fixing the data carrier within the storage device, said storage device being made by an injection molding process using plastic and a mold of the storage device:

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said apparatus comprising engagement means for engaging a protective means in the mold for forming at least a portion of the storage device against or around the protective means, such that the protective means cannot be removed from the storage device without damaging said storage device.--

--40. An apparatus for manufacturing a storage device for plate shaped data carriers according to Claim 39, wherein the protective means is a printing.--

--41. A method according to Claim 19, further including providing a means for fitting said protective means in the mold, wherein said protective means is a printing.--

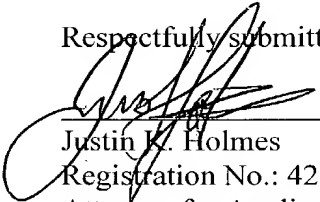
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REMARKS

The present Amendment has been submitted to place the claims in condition for examination and no new matter has hereby been added.

Applicant respectfully submits that the application, as amended, is in all respects complete and in condition for examination and favorable consideration, which action is earnestly solicited.

Respectfully submitted,



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VERSION OF AMENDMENT WITH MARKS
TO SHOW CHANGES MADE

IN THE CLAIMS:

Please amend Claims 4, 6, 7, 9, 10, 12-19, 21, 24-28, 30, 31, 32, 34 and 37 to read as follows:

--4. (Amended) A storage device (1, 50, 70, 120) according to claim 1 [any one of claims 1-3], wherein the protective means (35, 123, 38, 38A, 36, 37) at least comprise magnetic or electronically readable means (38, 38A), which are preferably substantially entirely surrounded by the material of the storage device (1, 50, 70, 120).--

--6. (Amended) A storage device (1, 50, 70, 120) according to claim 1 [any one of the preceding claims], comprise sealing means, for which purpose at least one cover part is provided with a number of lip-shaped sealing elements, while when the storage device (1, 50, 70, 120) is closed, the or each sealing element is moveable by at least a portion of its surface against the outer side of the other cover part and can be fixedly connected thereto, preferably through at least partial fusion, the arrangement being such that the data carrier (2) disposed in the storage device (1, 50, 70, 120) cannot be removed therefrom without breaking the sealing means.--

--7. (Amended) A storage device (1, 50, 70, 120) according to claim 1 [any one of the preceding claims], wherein the protective means (35, 123, 38, 38A, 36, 37) comprise projections (25) provided on at least a cover part and corresponding openings (24) in the opposite cover part, such that when the storage device (1, 50, 70, 120) is closed, the projections (25) project through the openings (24) outside the outer side of the relevant cover part comprising the openings (24), the projecting projection parts that extend outside the cover part being deformable in such a matter, for instance through heat, that the projections (25) cannot be withdrawn form the openings (24) out removal of at least a part of the projecting parts and/or damaging the projections (25) and/or cover parts (3, 5) otherwise.--

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--9. (Amended) A storage device (1, 50, 70, 120) according to claim 7 [claim 7 or 8], wherein each cover part is provided with a raised longitudinal edge, said longitudinal edges, when the storage device (1, 50, 70, 120) is closed, abutting against each other, the projections (25) and openings (24) being provided in or at least adjacent the area of the longitudinal edges.--

--10. (Amended) A storage device (1, 50, 70, 120) according to claim 1 [any one of the preceding claims], wherein the protective means (35, 123, 38, 38A, 36, 37) comprise at least one strip-shaped or band-shaped element (40) which, after closing the storage device (1, 50, 70, 120), is arranged so as to overlap at least a part of a seam between the first and the second cover part, and which is secured against the two cover parts (3, 5).--

--12. (Amended) A storage device (1, 50, 70, 120) according to claim 1 [any one of the preceding claims], wherein the protective means (35, 123, 38, 38A, 36, 37) comprise at least one holographic or comparable image (37) which is integrally injection molded in or on, or at least with the storage device (1, 50, 70, 120). --

--13. (Amended) A storage device (1, 50, 70, 120) according to claim 1 [any one of the preceding claims], wherein the protective means (35, 123, 38, 38A, 36, 37) comprise at least one bar-code (36).--

--14. (Amended) A storage device (1, 50, 70, 120) according to claim 1 [any one of the preceding claims], wherein the protective means (35, 123, 38, 38A, 36, 37) comprise sealing means provided on or against the fixing means (13, 15, 16, 17, 31, 100), the arrangement being such that a data carrier (2) placed in the storage device (1, 50, 70, 120) cannot be removed therefrom without breaking the sealing means.--

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--15. (Amended) A storage device (1, 50, 70, 120) according to claim 1 [any one of the preceding claims], wherein on the side remote from a back part (4) and the pivots, the two cover parts (3, 5) are provided with cooperating closing means.--

--16. (Amended) A storage device (1, 50, 70, 120) according to claim 1 [any one of the preceding claims], wherein the storage device (1, 50, 70, 120) is manufactured through injection molding from a plastic having a melt higher than 20, preferably higher than 30, in particular higher than 40 and even more in particular about 50.--

--17. (Amended) A storage device (1, 50, 70, 120) according to claim 1 [any one of the preceding claims], wherein the storage device (1, 50, 70, 120) is injection molded in one piece, preferably at least substantially from clear polypropylene or a like plastic suitable for forming integrally injection molded pivots.--

--18. (Amended) A storage device (1, 50, 70, 120) according to claim 1 [any one of the preceding claims], wherein the storage (1, 50, 70, 120) device is manufactured from clear, transparent plastic and wherein a preferably at least partially transparent printing (35, 123) is provided, said printing (35, 123) being at least partially visible from two opposite sides of a printed part of the device.--

--19. (Amended) A method for manufacturing a storage device (1, 50, 70, 120) for plate-shaped data carriers, said storage device having a first and a second cover pivotally connected, a fixing means for fixing the data carrier within the storage device, said storage device being injection molded from plastic, and a protective means, comprising placing [according to any one of the preceding claims, wherein] protective means (35, 123, 38, 38A, 36, 37) [are placed] in a mold and [wherein] subsequently forming at least a portion of the storage device (1, 50, 70, 120) [is formed] against or around the protective means (35, 123, 38, 38A, 36, 37) in the mold (101), preferably through injection molding, such that the protective means (35, 123, 38, 38A, 36, 37) cannot be removed from the relevant part without

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damage, characterized in that product information of a data carrier (2) to be stored in said storage device (1, 50, 70, 120) is being incorporated in said protective means (35, 123, 38, 38A, 36, 37).--

--21. (Amended) A method according to claim 19 [or 20], wherein a printing (23, 123) is provided in the mold (101), whereupon plastic in the mold (101) is provided against the printing (35, 123) or a carrier carrying the printing (35, 123), such that the printing (35, 123) will form an integral part of the storage device (1, 50, 70, 120) or a part thereof to be formed in the mold (101).--

--24. (Amended) A method according to claim 22 [or 23], wherein the carrier is slightly stretched before or during placement in the mold (101), such that it is pulled taut.--

--25. (Amended) A method according to claim 22 [any one of claims 22-24], wherein such a carrier is applied that under the influence of at least the temperature of the plastic provided thereagainst, it burns or sublimes, while the printing (35, 123) is incorporated on or into the plastic.--

--26. (Amended) A method according to claim 22 [claims 22-24], wherein the carrier fuses with the plastic.--

--27. (Amended) A method according to claim 22 [any one of claims 22-26], wherein the carrier with printing (35, 123) is supplied as a strip, in particular from a roll, and is cut directly before or during placement.--

--28. (Amended) A method according to claim 21 [any one of claims 21-27], wherein the printing (35, 123) is designed as transfer.--

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--30. (Amended) A method according to claim 21 [any one of claims 21-29], wherein a holographic printing (35, 123) is provided.--

--31. (Amended) A method according to claim 21 [any one of claims 21-30], wherein a bar-code (36) or the like is provided.--

--32. (Amended) A method according to claim 21 [any one of claims 21-31], wherein a carrier is provided in the mold (101), having a printing (35, 123) on two sides, the plastic being provided against the carrier and undetachably connected thereto.--

--34. (Amended) A method according to claim 19 [any one of claims 19-33], wherein the protective means (35, 123, 38, 38a, 36, 37) comprise magnetic and/or electronic means which are positioned on a carrier in the mold (101), whereupon plastic is squirted around the magnetic and/or electronic means, such that the carrier is enclosed or incorporated therein or disappears therein, for instance through burning or sublimation.--

--37. (Amended) A method according to claim 35 [any one of claims 35-36], wherein the or each strip-shaped or band-shaped element (40) is cut from a continuous strip of plastic directly prior to or during attachment against the storage device (1, 50, 70, 120).--

Please cancel Claim 38 without prejudice and substitute therefor Claims 39 and 40 as follows:

--39. An apparatus for manufacturing a storage device for plate shaped data carriers, said storage device having a first and second cover pivotally connected, a fixing means for fixing the data carrier within the storage device, said storage device being made by an injection molding process using plastic and a mold of the storage device:

said apparatus comprising engagement means for engaging a protective means in the mold for forming at least a portion of the storage device against or around the

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protective means, such that the protective means cannot be removed from the storage device without damaging said storage device.--

--40. An apparatus for manufacturing a storage device for plate shaped data carriers according to Claim 39, wherein the protective means is a printing.--

--41. A method according to Claim 19, further including providing a means for fitting said protective means in the mold, wherein said protective means is a printing.--

22. 01. 2001

Title: Storage device having protective means.

(41)

The invention relates to a storage device for plate-shaped data carriers according to the preamble of claim 1. Such storage device is known from FR 2 605 747.

5 This known storage device is injection molded, an electrical circuit incorporated therein. This circuit consists of a capacitor and a coil for responding to specific frequencies emitted from an antenna of an anti theft equipment. In this known storage device said electrical circuit is identical for each and every storage device.

10 A further storage device for plate-shaped data carriers is known from international patent application WO 97/20315.

This known storage device is box-shaped, at least in closed condition, and comprises a first and a second cover
15 part, pivotally interconnected for the opening and closing thereof. Provided within the storage device are fixing means for retaining the data carrier. This known storage device is presently substantially manufactured through injection molding. Such device is, for instance, intended for storing
20 CDs, diskettes, minidisks, creditcards or the like.

European patent application 0 420 350 teaches a storage device comprising a slightly box-shaped closing part with bottom and vertical walls, while the second closing part is cover-shaped and can be pressed against the first closing
25 part for closing it. Adjacent a central area thereof, the first closing part comprises resilient fingers capable of engaging a central opening of a CD so as to retain said CD in a position approximately parallel to said bottom face. The first and second closing parts are detachably interconnected.
30 Such box is intended for storing CDs and is usually referred to as jewelbox.

These known storage devices have as a drawback that the data carriers can easily get loose therefrom, and more in particular that they can easily be removed therefrom, while,
35 moreover, the storage devices themselves can easily be

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removed, imitated, damaged or otherwise manipulated fraudulently.

The object of the invention is to provide a storage device of the type described in the preamble, which is more suitably and more universally applicable for storing data carriers. In particular, the object of the invention is to provide storage devices which offer better protection against theft and/or imitation.

To that end, a storage device according to the present invention is characterized by the features of claim 1.

Injection molding storage devices of the present type offers the advantage that they can be manufactured in a simple and fast manner, and with great precision. The advantage achieved by including, during injection molding, protective means in or on the storage device, is that these protective means cannot be removed from the storage device, or at least not without clearly visible damage. This means that unacceptable manipulation of the storage device will be directly visible thereon, so that authenticity can be guaranteed. Moreover, the advantage achieved by injection molding the protective means integrally with the device is that they can be secured directly during the manufacture of the storage device, so that no further fastening means or operations are necessary.

In this context, "protective means" should at least be understood to mean anti-theft means and authentication means.

In a storage device according to the present invention a direct relationship is established between the storage device and a data carrier to be inserted therein. An unequivocal relationship between said storage device and the or each data carrier is established since specific product information is incorporated in said protective means.

It is preferred that a CD box of the present type be injection molded from polypropylene or a like plastic having a high shock-absorbing power, a suitable elastic modulus,

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relatively high flexibility and dimensional stability. Such storage device is particularly suitable for protecting data carriers, in particular during dispatch thereof, for instance via the mail, courier services and the like. Indeed, such

5 storage box will protect the data carrier in a particularly effective manner against impact loads and the like occurring during transport, while the data carrier cannot be removed from the storage device without any trouble.

10 In a first advantageous embodiment, a storage device according to the present invention is characterized by the features of claim 2.

The product-specific printing of at least a part of the storage device offers the advantage that it is easily and unequivocally recognizable whether the storage device belongs

to the data carrier included therein. Moreover, on such printing, it can be readily visible whether it concerns the authentic storage device for the data carrier in question. The advantage achieved by providing the printing during
5 manufacture of the storage device in the mold is that during manufacture, the printing forming part of the protective means is directly incorporated in or on the storage device, while the printing will adhere to the storage device in such a manner that it can no longer be removed therefrom without
10 damage.

In a further advantageous embodiment, a device according to the present invention is characterized by the features of claim 4.

The use of magnetic or electronically readable means
15 offers the advantage that the presence of or at least displacements of the storage device can readily be established by detection means suitable therefor. Thus, for instance unobserved removal of the storage devices from a shop or storehouse can be rendered considerably more
20 difficult or can even be prevented. The magnetic or electronic means can be designed such that specific product information can be incorporated therein, so that an unequivocal relationship between the storage device and an associated data carrier can be established. This also makes
25 it still easier to assess whether it concerns the authentic storage device. In this respect, it is preferred that the magnetic or electronic means be at least largely surrounded by the plastic from which the storage device is formed. Thus, unintended and improper manipulation thereof is rendered
30 considerably more difficult.

In a further alternative embodiment, a storage device according to the present invention is further characterized by the features of claim 6.

The sealing means offer the advantage that a data
35 carrier can easily be inserted into the storage device and be retained therein, in such a manner that it can no longer be

removed therefrom without this being visible on the sealing means. After all, for doing so, the sealing means have to be broken. Because the sealing means are formed integrally with the storage device, in particular injection molded integrally therewith, the advantage achieved is that the sealing means cannot be broken and/or removed and, after manipulation, for instance the removal or copying thereof, cannot be placed back again or replaced by new sealing means.

In a further advantageous embodiment, a storage device according to the present invention is further characterized by the features of claim 10.

The use of a holographic or comparable image forming an integral part of the storage device offers the advantage that it is protected against imitation even more properly. Indeed, reproduction of a hologram or a like image is not easily possible, while the removal thereof is not possible without damage, so that the holograms cannot be reused on other storage devices, while storage devices from which such holographic images have been removed cannot be reused either, because of the damage occurred. Such a storage device would at least be directly recognizable.

In a further advantageous embodiment, a storage device according to present invention is further characterized by the features of claim 13.

A bar-code makes the storage device easy to recognize and individualize. By integrally injection molding such bar-code, in particular as an integrally formed printing, removal or alteration thereof is rendered considerably more difficult or even impossible.

In an alternative embodiment, a storage device according to the present invention is further characterized by the features of claim 14.

In such storage device, the data carrier cannot be detached from the storage device without the sealing means being broken, in disregard of the question whether the storage device can be opened prior to the breaking of the

sealing means. This offers, for instance, the possibility of viewing the data carrier in the storage device or observing further information included in the storage device without the sealing means having to be broken. Moreover, such sealing means can be used as additional protective means.

In a preferred embodiment, a storage device according to the present invention is further characterized by the features of claim 16.

Manufacturing a storage device from a plastic having a relatively high melt offers the advantage that relatively thin-walled product parts can be manufactured with a relatively long flow travel. As a result, a storage device according to the present invention can be manufactured from relatively little material. This offers advantages in terms of economy and production, for instance due to relatively short cycle periods and low material costs. Moreover, the advantage thus achieved is that during dispatch of the storage devices with data carriers included therein, only relatively low dispatch costs have to be made. By using a plastic having a melt higher than 20, preferably higher than 30, these advantages are already obtained. However, it is preferred that an even higher melt be used, for instance higher than 40 and more in particular higher than 50. A higher melt offers the additional advantage that particularly little friction will occur between the walls of the mold and an injection molding mass moving therealong, in particular the flow skin thereof. This is advantageous in particular when, in a storage device according to the present invention, a printing is provided in the mold for inclusion in or on at least a part of the storage device, as described hereinabove, because damage to said printing is simply prevented thereby. This is partly because of the fact that for this, relatively low injection molding pressures may suffice.

In a particularly advantageous embodiment, a storage device according to the present invention is further characterized by the features of claim 17.

Injection molding the storage device in one piece from polypropylene or a like plastic offers the advantage that the cover part cannot be separated from the bottom part or from the fixing means without any damage, so that improper
5 manipulation of a data carrier included therein can be prevented even more simply, while it is moreover protected against damage in an even better manner. In addition, such storage device offers the advantage that it can be manufactured integrally in a fast and simple manner.

10 In a further advantageous embodiment, a storage device according to the invention is characterized by the features of claim 18.

Designing the storage device in clear, transparent plastic offers the advantage that a printing can be provided
15 therein or thereon which is visible at least on a part of the storage device from two sides thereof, for instance on the outer and inner sides of a cover part or bottom part. This readily prevents the necessity of providing such printing on two sides. Moreover, such storage device has a particularly
20 pleasant outward appearance. By giving the printing an at least partially transparent design, the attractiveness of this outward appearance can even be further increased, while, moreover, the data carrier can be rendered at least partially visible from the outer side of the storage device, if so
25 desired. Further, such at least partially transparent printing requires a high precision, so that the copying thereof is complicated still further.

The invention further relates to a method for manufacturing a storage device according to the present
30 invention, characterized by the features of claim 19.

In a first particularly advantageous embodiment, a method according to the present invention is characterized by the features of claim 24.

The provision of a printing in the mold prior to the
35 introduction of a plastic injection molding mass offers the advantage that integral incorporation of the printing in or

on the relevant product part to be formed can readily be provided. By providing the printing on a carrier, such that the printing with the carrier can be placed in the mold, placement becomes possible in a simple manner. By slightly
5 expanding the carrier prior to and/or during its placement in the mold, such that the carrier is under some tension, preferably on all sides, it is easily provided that any wrinkles or the like in the carrier and, accordingly, in the printing, are removed and/or the formation thereof during
10 placement is prevented. Thus, in a particularly simple and reliable manner, the printing with the carrier can be introduced into the mold so as to be completely smooth. It is preferred that the carrier adheres to the wall of the mold, for instance through a static load, through reduced pressure
15 between carrier and mold part, through sticking or in another suitable manner. The plastic can then be provided against the printing and/or the carrier, such that the printing starts to form an integral part of the relevant product part, preferably the storage device formed in one piece. Partly due
20 to the tension used, the carrier may be particularly thin and, for instance, supplied from a roll.

For this, a carrier can be used which disappears at least largely, due to the introduction of the plastic mass, or is incorporated therein entirely or partially.
25 Alternatively, a carrier can be used which fuses with said plastic.

In an alternative, particularly advantageous embodiment, a method according to the present invention is characterized by the features of claim 29.

30 By providing a printing in the mold, directly on the wall thereof, for instance utilizing an impressing technique, a printing technique or the like, the advantage achieved is that no carrier is required, at least that the carrier need not be printed prior to its positioning in a mold.
35 Preferably, the carrier is left out entirely. In particular with such a method, the printing can be adjusted for each

storage device, if so desired. For instance, a printing apparatus can be used which is controlled by means of, for instance, a computer, so that for a series of storage devices, the printing can in each case be adjusted, completely or partially. In this manner, each successive printing may carry a different, unique recognition code, for further authentication. It is even possible to supply desired printings to the apparatus remotely, for instance via a telephone or computer network.

10 In a further advantageous embodiment, a method according to the present invention is characterized by the features of claim 34.

The positioning of protective means such as magnetic and/or electronic means on one or more carriers in the mold prior to the introduction of the plastic mass therein, offers the advantage that these protective means can be incorporated and fixed in the storage device in a particularly simple manner.

The invention further relates to an apparatus for manufacturing a storage device according to the invention or for using a method according to the present invention.

Further embodiments of a storage device or method according to the present invention are given in the subclaims and the specification.

25 To clarify the invention, exemplary embodiments of a storage device and a method, and of an apparatus for the manufacture or use thereof according to the invention, will hereinafter be further described, with reference to the accompanying drawings. In these drawings:

30 Fig. 1 is a top plan view and side elevation of a storage device in open condition;

Fig. 2 is a sectional side elevation of a storage device according to Fig. 1, suitable for substantially circular data carriers such as CDs;

35 Fig. 2a is an enlarged sectional view of a storage device taken on the line A-A in Fig. 2;

Fig. 3 is a partially sectional side elevation of a storage device according to Fig. 1, suitable for substantially rectangular data carriers, such as diskettes and minidisks;

5 Fig. 4 is a sectional side elevation of a storage device according to Fig. 1 in a further alternative embodiment;

Fig. 5 is a perspective view of a storage device in a further alternative embodiment;

10 Fig. 6 schematically shows an apparatus for manufacturing a storage device according to the invention;

Fig. 6a shows an alternative embodiment of a device according to the invention;

15 Fig. 7 is a partially sectional side elevation of sealing means according to the invention;

Fig. 8 is a front view of a storage device according to the invention, with alternative protective means;

Fig. 9 shows an alternative embodiment of a storage device;

20 Fig. 10 schematically shows an apparatus for fitting protective means as shown in Fig. 8; and

Fig. 11 shows a strip for protective means as shown in Figs. 8-10.

In this specification, identical or corresponding parts have identical or corresponding reference numerals. The
25 general construction of storage devices according to Figs. 1-4 are discussed at length in international patent application WO 97/20315, the general construction of storage devices according to Fig. 5 are discussed at length in EP
30 0 420 350, which publications are understood to be incorporated herein by reference.

Fig. 1 shows a storage device 1 for a data carrier 2. A data carrier 2 to be stored may, for instance, be circular, such as compact discs (CD-i, CD-ROM; Fig. 3), or
35 substantially rectangular, such as chipcards, diskettes, minidisks and the like (Fig. 5). The storage device 1

according to Figs. 1-4 is of one-part construction and, for instance, manufactured through injection molding from a relatively environmentally friendly, recyclable plastic such as polypropylene. Polypropylene and like plastics have a relatively high resistance to shocks and tearing, a relatively favorable elastic modulus and can suitably be injection molded. Moreover, properly printable, impact-resistant and scratch-resistant plastics are preferably used. However, other plastics may also be used, if so desired. As will be further explained hereinbelow, in particular clear, transparent plastics, such as clear polypropylene, can be used in an advantageous manner.

A storage device 1 as shown in Figs. 1-4 comprises a first closing part 3, an intermediate part 4 and a second closing part 5, interconnected via two integrated pivots 6 adjacent the bottom side, such that the closing parts 3, 5 can be swiveled from the open position shown in full lines into a closed position shown in broken lines (Fig. 1).

The first closing part 3 has a top face, a front edge 8 and two first sidewalls 9 adjoining thereto. The second closing part 5 likewise has a top face 10, two raised second sidewalls 11 and a front edge 8A. In the closed condition, the second sidewalls 11 abut against the first sidewalls 9, while the front edge 8 abuts against the front edge 8A of the second closing part 5. The bottom side 12 of the intermediate part 4 constitutes the fourth wall of the storage device 1 in closed condition, so that it is closed off in an entirely waterproof and dustproof manner. The receiving means 13 for the data carrier 2, which receiving means will be specified hereinbelow, are accommodated in the intermediate part 4 and, when the storage device 1 is in its closed condition, are accommodated in the inner space 14 thereof, possibly together with a data carrier 2 included therein.

The intermediate part 4 comprises two spaced apart wall parts 15, interconnected by transverse partitions 16, shown in enlarged view in Fig. 2A. On the side remote from

the pivots 6, the walls 15 are provided with toothed clamping projections 17, while in each case two clamping projections 17 are positioned opposite each other. Enclosed between the clamping projections 17 is a groove 18 whose width B is slightly smaller than the thickness D of the data carrier 2 that is to be stored in the storage device.

In the embodiment shown in Fig. 2, the groove 18 extends along a segment of a circle having a radius R which approximately corresponds to the radius of a circular data carrier, such as a CD, to be included therein. The circular segment encloses an angle α of less than 180° . Preferably, the enclosed angle α is about 120° .

In the embodiment of a storage device 50 according to the invention shown in Fig. 3, the groove 18 extends along three sides of an imaginary rectangle CK, shown in the drawing in broken lines. On the side proximal to the pivots 6, three pairs of clamping projections 17 are disposed along the groove 18, while along the two groove parts 18' that extend at right angles thereto, one pair of clamping projections is in each case provided. In this embodiment, the storage device 50 is in particular suitable for storing data carriers having a substantially rectangular shape, such as chipcards, creditcards, magnetic cards, diskettes, cassettes, minidisks and the like.

As appears from in particular Fig. 1, in the embodiment shown, a storage device according to the present invention is manufactured from clear, transparent plastic, on which a printing 35 is provided, in the embodiment shown symbolically represented by the word "text", visible through the closing parts 3, 5. There are further provided a bar-code and a holographic image 37, in the embodiment shown represented by an H. Such holographic images are generally known and are, for instance, supplied by the printer Johan Enschede, the Netherlands. The bar-code 36 and the holographic image 37 are provided, along with the printing 35, in or at least on the storage device.

For at least a portion of the printing 35, an ink luminescing under ultraviolet or infrared ink, such as a hologram structure, is preferably used, as known from patent application WO 99/45513, incorporated herein by reference.

5 In a storage device according to the present invention, in the embodiment shown in Figs. 1 and 2, a magnetic strip 38 is integrally injection molded in the intermediate part 4, which strip is designed for cooperation with detection means installed in, for instance, a shop. Such
10 magnetic strips are known per se in various embodiments. A choice therefrom is directly clear to a skilled person. Preferably, magnetic strips 38 are used which can contain remotely readable information for authenticating the storage device. By such magnetic strip, theft of the storage device
15 with data carrier included therein can be rendered substantially more difficult or even be prevented, while, moreover, the tracing and following of the storage device during production processes can thereby be simplified.

Similarly, in the embodiment shown in Fig. 3, coils
20 38A are incorporated for the same or comparable purposes. Other types of transponders may also be applied.

Provided on the longitudinal walls 11 of the second closing part 5 are fingers 25, extending approximately parallel to the plane of the longitudinal walls 11, slightly
25 displaced inwards relative to the outer side thereof. The fingers 25 extend above the top edge 26 of said longitudinal wall 11 over a height which is slightly greater than the height of the longitudinal walls 9 of the first closing part 3. At corresponding positions, openings 24 have been provided
30 in the bottom face 7 of the first closing part 3, through which openings 24 the fingers 25 can extend, such that when the storage device 1 is closed, the top ends 27 extend beyond the bottom face 7. The fingers and openings are shown more specifically in Fig. 7.

35 Fig. 4 shows an alternative embodiment of a storage device 70, with data carrier 2 included therein. In this

relatively simple and compact embodiment, the clamping projections 17 are positioned directly on the intermediate part 4 in three pairs, so that the longitudinal edge of the data carrier 2 lies approximately against the center part 4. Hence, the groove 18 lies close against the center part and has two interrupted walls. At their free ends 30, the projections 17 slightly divert outwards, to form an insert opening for the data carrier 2 towards the clamping parts 31 of the projections 17, which insert opening converges in the direction of the center part.

In a usual manner, the closing parts 3, 5 are provided with means for including text booklets, librettos and like added information means.

Fig. 5 shows a jewel box of the known type, described in EP 0 420 350. However, in this embodiment, an integrated printing 37 is provided according to the invention. The resilient fingers 110 are moreover interconnected by sealing lips which are melted together after insertion of the CD. As a result, the CD cannot be removed before the sealing means are broken. Further, a magnetic strip 38 is integrally injection molded in the back 111 of the box, so that the jewel box is always traceable and, moreover, theft thereof is rendered considerably more difficult. Closing lips 25 and associated openings 24 may be provided, if so desired (not shown).

Fig. 6 schematically shows an apparatus 100 for manufacturing a storage device according to the invention, in particular according to Figs. 1-4. In this Figure, the parts of the mold 101 are designated by the reference numerals of the parts of the storage device. This apparatus 100 comprises supply means 102 for a carrier 103 with printing 35-37, tension and transfer means 104 for the carrier 103 and an injection molding apparatus 105 with mold 101. On the carrier 103, manufactured from plastic, for instance film-shaped plastic having a thickness of less than 80 micrometer, for instance 20-30 micrometer, a printing 35 is provided with

transfer ink. Preferably, this printing 35 is partially transparent, for instance built up from slightly spaced apart pixels. Preferably, the carrier 103 is transparent, so that the printing is visible from two sides of the carrier 103. If
5 so desired, there are also provided on the carrier a bar-code 36 and a holographic image 37. The bar-code 36 may, for instance, be printed or impressed, the holographic image is, for instance, impressed or glued onto the carrier 103. The carrier 103 is rolled up in the supply means 102 and can be
10 supplied, via the roll, to a frame 106 of the tension and transfer means 104. The carrier 103 is clamped on the frame 106, such that folds and the like are pulled smooth. By punch means 107, the carrier is cut to measure, for instance to the size of the first 3 and second closing part 5 and the
15 intermediate part 4. The carrier 103 is fixed on the frame 106 through, for instance, clamping, reduced pressure, adhesion or static load. Next, by means of the tension and transfer device, the carrier 103 is transferred into the mold 101, with the carrier 103 being fixed against the wall of the
20 mold 101, opposite the cavity for forming the fixing means. By static load, adhesion, suction or the like, the carrier 103 is secured, whereupon the frame 106 is pulled away. By support means 39, a magnetic strip 38 or an electric coil 38A or like authenticating and/or protective means is placed in
25 the mold. Next, the mold 101 is closed and a plastic mass is introduced into the injection molding apparatus 105 by means of an injector known per se and schematically shown as pump 108. Preferably, this mass has a high melt, for instance higher than 30 and preferably higher than 50. The mass flows
30 through the mold cavity along the carrier 103. This involves sublimation of the carrier 103, while the printing 35, 36, 37 is incorporated onto and into the plastic skin of the flowing mass. In so far as the carrier 103 does not sublime or burn, it will be incorporated into the mass. Thus, in one shot, a
35 storage device is obtained having a two-sided printing 35,

magnetic strip or coil 38, 38A or the like, bar-code 36 and hologram 37.

Since use is made of a particularly high melt (higher than 20), long flow paths can be used at small wall thicknesses, for instance to less than 1 mm. The high melt offers the surprising advantage that the solidifying plastic mass, rolling down along the mold wall and hence the printing, which mass forms a thin skin, does not damage the printing (text, image, bar-code and the like), while undesired stresses in the material are moreover prevented. Thus, deformations of the storage devices are prevented. Thin walls offer the advantage that short cycle times are possible, little material is needed and the storage devices have little weight. As a result, dispatch is possible in a simple and advantageous manner.

In the embodiment shown in Fig. 6A, a printer head 120 is moveable in the mold 101 for providing a printing therein, preferably in transfer ink. Such ink is known per se and is properly incorporated into the plastic without running in an undesired manner. The printer head 120 is controlled by a computer 121, whereby the printing can be determined for any storage device to be injection molded. Thus, in principle, the printing can be adjusted for each individual storage device, for instance by changing a serial number of by an entirely different printing. Thus, an even better authentication is obtained. The computer may, for instance, be connected to a computer network for supplying desired printings online.

A storage device according to the invention can be used as follows.

In an injection molding machine as shown in Fig. 6, a storage device 1, 50, 70 is manufactured in one production operation and subsequently fed to a packaging line, with the closing parts 3, 5 lying flat on a conveying means, such as a conveyor belt. The intermediate part 4 extends approximately vertically, at least approximately at right angles to the

plane of the conveying means and is open at the top (Fig. 1). A data carrier 2 is simply inserted into receiving means 13 by pressing a longitudinal edge 19 thereof between the clamping projections 17 and pushing it further in the direction of the bottom 20 of the groove 18. This causes the clamping projections 17 to be slightly pressed apart, while a clamping force is created, due to the deformation forces. Accordingly, the clamping projections 17 are pressed against the flat outer surfaces 21 of the data carrier. The groove has such a depth that information-carrying parts K are not reached by the clamping projections 17. Next, booklet and the like, if any, can be placed in the receiving means intended therefor.

After the data carrier 2 has been inserted between the clamping projections 17, the closing parts 3, 5 are swiveled in the direction of the intermediate part 4 and the data carrier 2, such that the or each closure is closed. This involves the fingers 25 slipping into the openings 24, such that their top ends 27 project therefrom. Next, these top ends are heated such that they melt slightly and widen across the edges of the opening 24. The starting position is shown in Fig. 7 on the left-hand side of the center line, the end situation is shown on the right-hand side. As Fig. 7 clearly demonstrates, the deformed ends 27 of the fingers 25 will have to be removed, for instance cut away, before the storage device can be opened. Thus, a proper authenticating seal is obtained.

In an alternative embodiment not shown, the fingers 25 are provided against an outer side of the wall parts of the opposite closing part. The fingers 25 have then at least partially fused with said wall parts through heating, such that the parts have to be cut loose from one another before the storage device can be opened. The materials used allow cutting in a simple manner, without directly involving breakage. Preferably, the fingers are received in slots, such

that the sides of the storage device remain substantially flat.

Fig. 8 is a front view of a storage device 1 according to the invention, comprising a further alternative embodiment of protective means. In the embodiment shown, the storage device 1, which may have any embodiment shown in this specification, but which may, for instance, also be a storage device for other types of products, such as a bottle with screw cap, as shown schematically in Fig. 9, a package for loose bulk material such as pins and the like or medicine packages, comprises a first closing part 3 and a second closing part 5, again interconnected by a pivot 6, although loose closing parts can be used as well. In this specification, closing parts are also referred to as cover parts.

In the embodiment shown in Fig. 8, a strip-shaped element 40 of slight dimensions compared with the dimensions of the further storage device 1, is attached to the outer side of the storage device. A first end of the strip-shaped element 40 is secured against the first closing part 3, the opposite end is secured against the second closing part 5. Hence, the element 40 overlaps the seam 41 formed between the two closing parts and the two closing parts 3, 5 cannot be swiveled relative to each other. In the embodiment shown, the element 40 is provided on the side of the storage device remote from the pivot 6, for maximum protection. Of course, two or more of such elements 40 can be provided, also against sides other than the one mentioned. The or each band-shaped element 40 has a small thickness, for instance some tenths of millimeters or even less, for instance film-shaped. Preferably, the element 40 can readily be cut through or, optionally, torn, without damaging the storage device or the contents thereof. For that purpose, in an alternative embodiment, a weakening line may for instance be provided at the level of said seam 41.

Fig. 10 schematically shows an apparatus 60 whereby band-shaped elements 40 as shown in Fig. 8 can be secured on a storage device in a simple and fast manner. This apparatus 60 comprises a first roll 61 on which a strip 62 of plastic material, preferably of an ultrasonic weldable type, is wound. This strip 62 has a width that is slightly greater than the desired width of the band-shaped element 40, as appears from Fig. 11. The strip 62 is unwound from said first roll 61 and guided along a side of a storage device 1 against which the band-shaped element 40 is to be secured. At the level of said side of the storage device, a cutting tool 63 is moved against the strip 61 approximately at right angles to the feed-through direction S, to cut from the strip 62 a strip having the size of the desired band-shaped element 40, with a part 64 of the strip remaining on either side thereof. The cut or punched band-shaped element 40 is subsequently pressed against the storage device and secured against it in the desired position, preferably by ultrasonic welding or a like heat-joining technique. The band-shaped element 40 may also be glued against one or both parts 3, 5. The storage devices can automatically be supplied and discharged, for instance in a direction at right angles to the plane of the drawing. After the band-shaped element 40 has been cut from the strip 62, the strip 62 can be wound on a second roll 65. As the strip remains windable, the operation can be performed at a particularly great speed. Some tens to hundreds of band-shaped elements per minute.

Fig. 9 shows a medicine bottle 120 with screw cap 12, with a band-shaped element 40 being partially secured on the screw cap 121 and partially on the medicine bottle 120. Provided on the band-shaped element is a code 123, preferably by means of the cutting tool. This code may, for instance, comprise a date of manufacture, an indication of the type of medicine or the like.

It will be understood that when several band-shaped elements 40 are to be provided against a storage device, an

apparatus 60 can have a corresponding number of first and second rolls and cutting tools. Of course, the band-shaped elements 40 may also be provided in another direction, for instance with a feed-through direction S parallel to the seam 41. A relatively long band-shaped element 40 may, for instance, extend over substantially the full length of the relevant side of the storage device 1. Also, loose band-shaped elements 40 may be supplied and secured against a storage device.

The invention is by no means limited to the embodiments represented in the drawings and specification. Many variations thereof are possible. For instance, a storage device according to the invention may be designed differently, for instance having several fixing means next to or behind one another, while the storage devices may moreover be manufactured from other materials. Also, other printing techniques may be applied. The printing may of course also be provided on the inner side or on both sides. For that matter, it will be clear that the printing techniques described may also be applied to other types of products. The data carriers may be inserted into the storage device at another moment, for instance in a shop, whereupon they can be sealed by means of said fingers and openings. These and many comparable variations are understood to fall within the framework of the invention outlined by the appended claims.

New Claims

1. A storage device (1, 50, 70, 120) for plate-shaped data carriers and at least one plate-shaped data carrier (2), said storage device (1, 50, 70, 120) being box-shaped and comprising a first and a second cover part, pivotally
5 connected, wherein fixing means (13, 15, 16, 17, 31, 110) are provided for fixing said at least one data carrier (2) within the storage device (1, 50, 70, 120), the storage device (1, 50, 70, 120) being injection molded from plastic and being closable, and protective means (35, 123, 38, 38A, 36, 37)
10 being integrally injection molded in the storage device (1, 50, 70, 120) during manufacture, characterized in that said protective means (35, 123, 38, 38A, 36, 37) are designed such that specific product information is incorporated therein, specific for the at least one data carrier (2), so that an
15 unequivocal relationship between the storage device (1, 50, 70, 120) and said data carrier (2) is established.
2. A storage device (1, 50, 70, 120) according to claim 1, wherein the protective means (35, 123, 38, 38A, 36, 37) at least comprise a product-specific printing (35, 123) provided
20 during manufacture in the mold (101) and included in or on the storage device (1, 50, 70, 120).
3. A storage device (1, 50, 70, 120) according to claim 2, wherein the printing (35, 123) is provided at least on the outer side of the storage device (1, 50, 70, 120) and extends
25 over at least a cover, a back (4) and the intermediate pivot.
- Sub a*
4. A storage device (1, 50, 70, 120) according to any one of claims 1-3, wherein the protective means (35, 123, 38, 38A, 36, 37) at least comprise magnetic or electronically readable means (38, 38A), which are preferably substantially
30 entirely surrounded by the material of the storage device (1, 50, 70, 120).
5. A storage device (1, 50, 70, 120) according to claim 4, wherein the protective means (35, 123, 38, 38A, 36, 37)

comprises a magnetic strip (38) which can cooperate with detection means therefor.

5 6. A storage device (1, 50, 70, 120) according to any one of the preceding claims, wherein the protective means (35, 123, 38, 38A, 36, 37) comprise sealing means, for which purpose at least one cover part is provided with a number of lip-shaped sealing elements, while when the storage device (1, 50, 70, 120) is closed, the or each sealing element is movable by at least a portion of its surface against the
10 outer side of the other cover part and can be fixedly connected thereto, preferably through at least partial fusion, the arrangement being such that the data carrier (2) disposed in the storage device (1, 50, 70, 120) cannot be removed therefrom without breaking the sealing means.

15 7. A storage device (1, 50, 70, 120) according to any one of the preceding claims, wherein the protective means (35, 123, 38, 38A, 36, 37) comprise projections (25) provided on at least a cover part and corresponding openings (24) in the opposite cover part, such that when the storage device (1,
20 50, 70, 120) is closed, the projections (25) project through the openings (24) outside the outer side of the relevant cover part comprising the openings (24), the projecting projection parts that extend outside the cover part being deformable in such manner, for instance through heat, that
25 the projections (25) cannot be withdrawn from the openings (24) without removal of at least a part of the projecting parts and/or damaging the projections (25) and/or cover parts (3, 5) otherwise.

8. A storage device (1, 50, 70, 120) according to claim 7,
30 wherein the projections (25) are arranged on the first cover part and the openings (24) are arranged in the second cover part.

35 9. A storage device (1, 50, 70, 120) according to claim 7 or 8, wherein each cover part is provided with a raised longitudinal edge, said longitudinal edges, when the storage device (1, 50, 70, 120) is closed, abutting against each

other, the projections (25) and openings (24) being provided in or at least adjacent the area of the longitudinal edges.

10. A storage device (1, 50, 70, 120) according to any one of the preceding claims, wherein the protective means (35, 123, 38, 38A, 36, 37) comprise at least one strip-shaped or band-shaped element (40) which, after closing of the storage device (1, 50, 70, 120), is arranged so as to overlap at least a part of a seam between the first and the second cover part, and which is secured against the two cover parts (3, 5).

11. A storage device (1, 50, 70, 120) according to claim 10, wherein the or each strip-shaped or band-shaped element (40) is of tearable design and preferably comprises a weakening that defines a tearing line approximately at the level of said seam.

Sub 12
12. A storage device (1, 50, 70, 120) according to any one of the preceding claims, wherein the protective means (35, 123, 38, 38A, 36, 37) comprise at least one holographic or comparable image (37) which is integrally injection molded in or on, or at least with the storage device (1, 50, 70, 120).

13. A storage device (1, 50, 70, 120) according to any one of the preceding claims, wherein the protective means (35, 123, 38, 38A, 36, 37) comprise at least one bar-code (36).

14. A storage device (1, 50, 70, 120) according to any one of the preceding claims, wherein the protective means (35, 123, 38, 38A, 36, 37) comprise sealing means provided on or against the fixing means (13, 15, 16, 17, 31, 110), the arrangement being such that a data carrier (2) placed in the storage device (1, 50, 70, 120) cannot be removed therefrom without breaking the sealing means.

15. A storage device (1, 50, 70, 120) according to any one of the preceding claims, wherein on the side remote from a back (4) part and the pivots, the two cover parts (3, 5) are provided with cooperating closing means.

16. A storage device (1, 50, 70, 120) according to any one of the preceding claims, wherein the storage device (1, 50,

70, 120) is manufactured through injection molding from a plastic having a melt higher than 20, preferably higher than 30, in particular higher than 40 and even more in particular about 50.

5 17. A storage device (1, 50, 70, 120) according to any one of the preceding claims, wherein the storage device (1, 50, 70, 120) is injection molded in one piece, preferably at least substantially from clear polypropylene or a like plastic suitable for forming integrally injection molded
10 pivots.

18. A storage device (1, 50, 70, 120) according to any one of the preceding claims, wherein the storage device (1, 50, 70, 120) is manufactured from clear, transparent plastic and wherein a preferably at least partially transparent printing
15 (35, 123) is provided, said printing (35, 123) being at least partially visible from two opposite sides of a printed part of the device.

19. A method for manufacturing a storage device (1, 50, 70, 120) according to any one of the preceding claims, wherein
20 protective means (35, 123, 38, 38A, 36, 37) are placed in a mold (101) and wherein subsequently at least a portion of the storage device (1, 50, 70, 120) is formed against or around the protective means (35, 123, 38, 38A, 36, 37) in the mold (101), preferably through injection molding, such that the
25 protective means (35, 123, 38, 38A, 36, 37) cannot be removed from the relevant part without damage, characterized in that product information of a data carrier (2) to be stored in said storage device (1, 50, 70, 120) is being incorporated in said protective means (35, 123, 38, 38A, 36, 37).

30 20. A method according to claim 19, wherein the storage device (1, 50, 70, 120) is injection molded in one piece.

*Sub
as*
21. A method according to claim 19 or 20, wherein a printing (35, 123) is provided in the mold (101), whereupon plastic in the mold (101) is provided against the printing (35, 123) or
35 a carrier carrying the printing (35, 123), such that the printing (35, 123) will form an integral part of the storage

device (1, 50, 70, 120) or a part thereof to be formed in the mold (101).

22. A method according to claim 21, wherein the printing (35, 123) is introduced into the mold (101) on a carrier.

5 23. A method according to claim 22, wherein the carrier is turned towards the adjacent wall of the mold (101) and the plastic is provided against the opposite side.

Sub 6
10 24. A method according to claim 22 or 23, wherein the carrier is slightly stretched before or during placement in the mold (101), such that it is pulled taut.

25. A method according to any one of claims 22-24, wherein such a carrier is applied that under the influence of at least the temperature of the plastic provided thereagainst, it burns or sublimes, while the printing (35, 123) is
15 incorporated on or into the plastic.

26. A method according to claims 22-24, wherein the carrier fuses with the plastic.

27. A method according to any one of claims 22-26, wherein the carrier with printing (35, 123) is supplied as a strip,
20 in particular from a roll, and is cut directly before or during placement.

28. A method according to any one of claims 21-27, wherein the printing (35, 123) is designed as transfer.

29. A method according to claim 21, wherein the printing
25 (35, 123) is provided in the mold (101) through impressing or printing (35, 123) on a wall part of the mold (101) or a carrier provided thereon.

Sub 7
30 30. A method according to any one of claims 21-29, wherein a holographic printing (35, 123) is provided.

31. A method according to any one of claims 21-30, wherein a bar-code (36) or the like is provided.

32. A method according to any one of claims 21-31, wherein a carrier is provided in the mold (101), having a printing (35, 123) on two sides, the plastic being provided against the
35 carrier and undetachably connected thereto.

33. A method according to claim 32, wherein the carrier is at least partially transparent.

Sub a8
34. A method according to any one of claims 19-33, wherein the protective means (35, 123, 38, 38A, 36, 37) comprise magnetic and/or electronic means which are positioned on a carrier in the mold (101), whereupon plastic is squirted around the magnetic and/or electronic means, such that the carrier is enclosed or incorporated therein or disappears therein, for instance through burning or sublimation.

10 35. A method for manufacturing a storage device (1, 50, 70, 120) for products, in particular for plate-shaped data carriers (2), said storage device (1, 50, 70, 120) comprising a first and a second cover part, said storage device (1, 50, 70, 120) being injection molded from plastic, in particular

15 polypropylene or the like, whereupon one or more products are included in the storage device (1, 50, 70, 120) and the storage device (1, 50, 70, 120) is closed around the products by moving the first and the second cover part against each other, whereupon at least one strip-shaped or band-shaped

20 element (40) is secured against the first and the second cover part, such that the cover parts (3, 5) are interconnected and products cannot be approached other than after breaking the protective means (35, 123, 38, 38A, 36, 37) formed by the at least one strip-shaped or band-shaped

25 element (40), said at least one strip-shaped or band-shaped element (40) being connected to the cover parts (3, 5) through heat treatment.

36. A method according to claim 35, wherein the first cover part is pivotally connected to the second cover part by pivot means, at least one strip-shaped or band-shaped element (40) being provided at a distance from the pivot means.

Sub a9
37. A method according to any one of claims 35-36, wherein the or each strip-shaped or band-shaped element (40) is cut from a continuous strip of plastic directly prior to or

35 during attachment against the storage device (1, 50, 70, 120).

38. An apparatus (100) for manufacturing a storage device
(1, 50, 70, 120) according to any one of claims 1-18 or for
using a method according to any one of claims 19-34, wherein
the apparatus (100) is arranged for injection molding, means
5 being provided for fitting protective means (35, 123, 38,
38A, 36, 37) in the mold (101), in particular a printing (35,
123).

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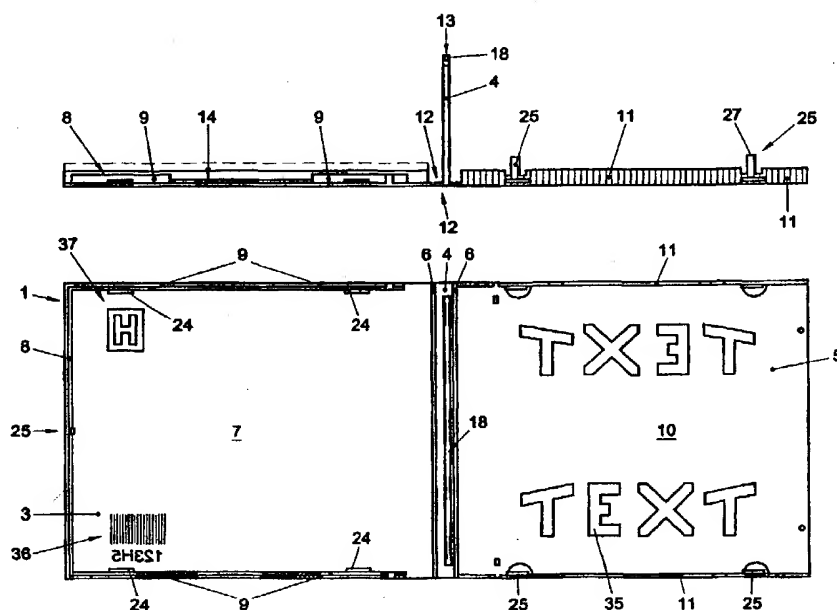
09/13906.012202



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(54) Title: STORAGE DEVICE HAVING PROTECTIVE MEANS



(57) Abstract

A storage device for plate-shaped data carriers, said storage device being box-shaped and comprising a first and a second cover part, pivotally connected, wherein fixing means are provided for fixing the data carrier within the storage device, the storage device being injection molded from plastic, in particular polypropylene or the like, and being closable, and protective means being integrally injection molded in the storage device during manufacture.

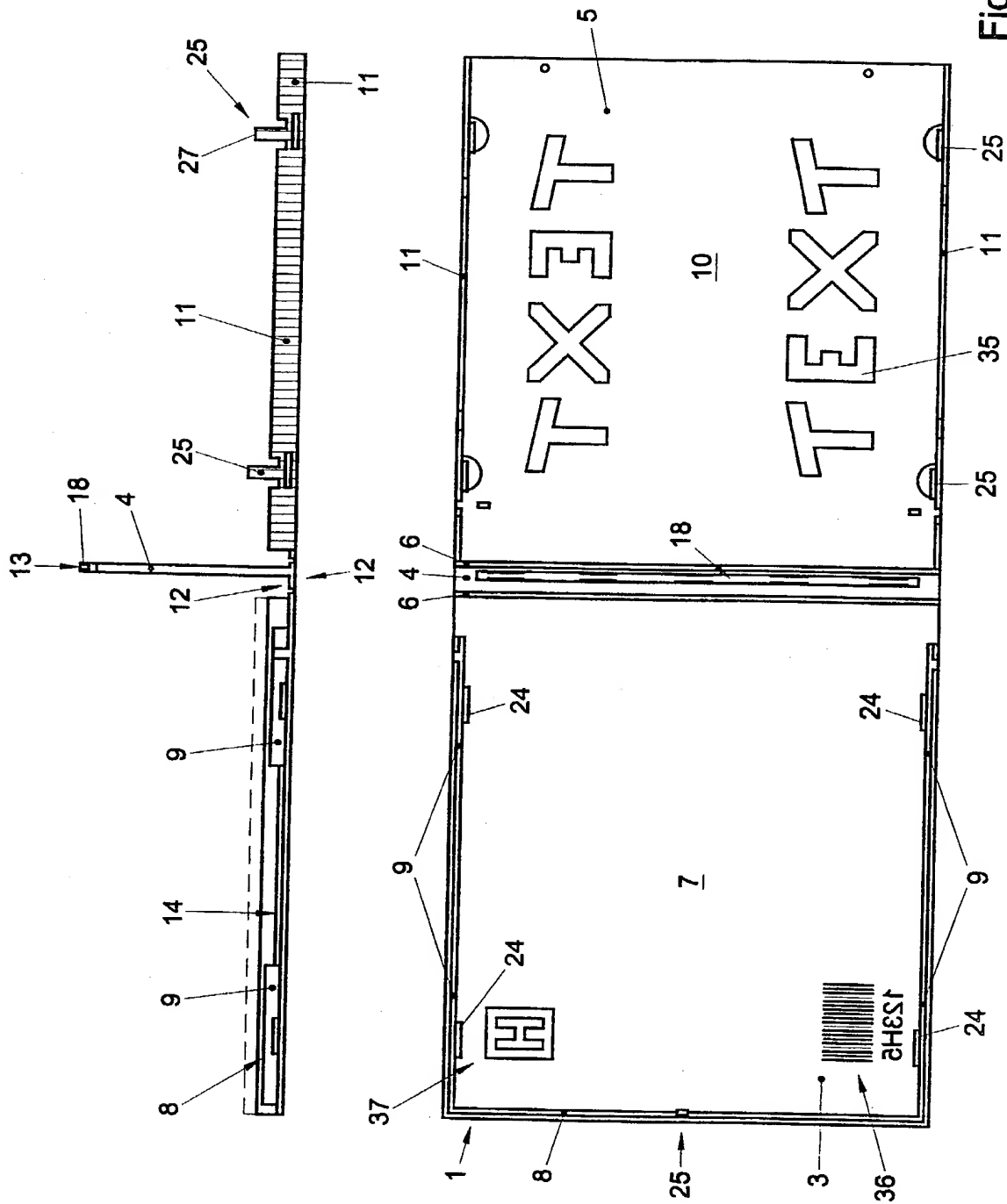


Fig. 1

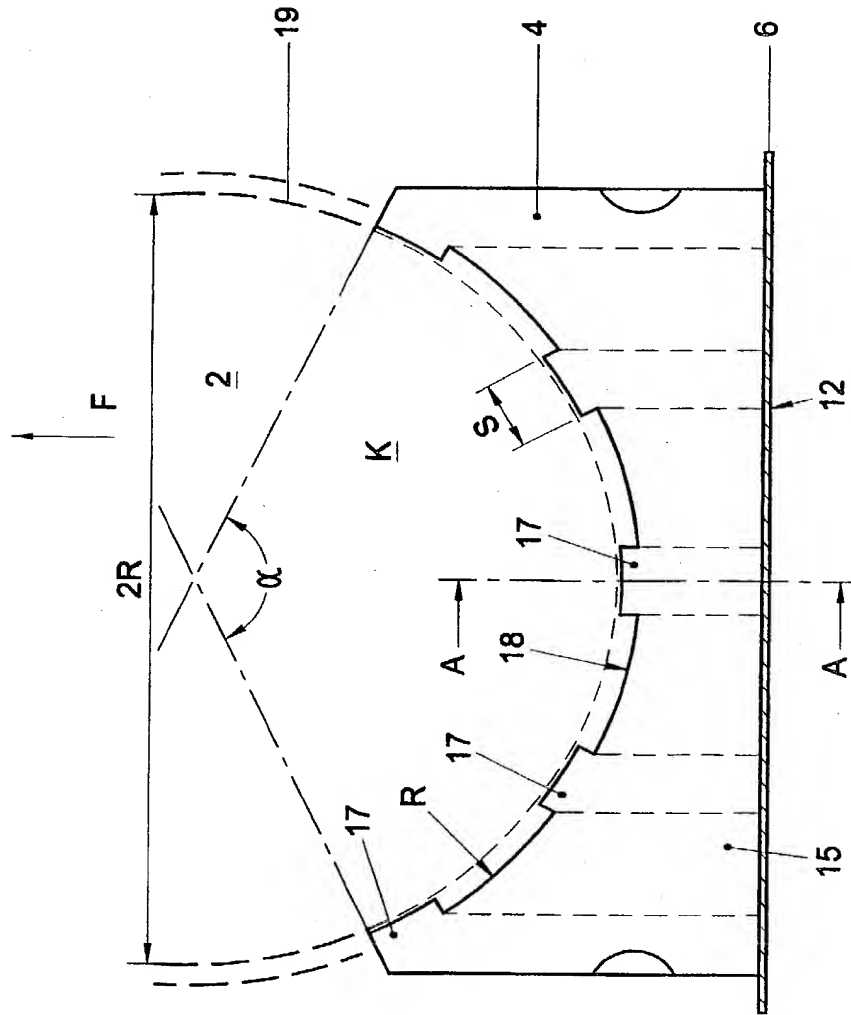


FIG. 2

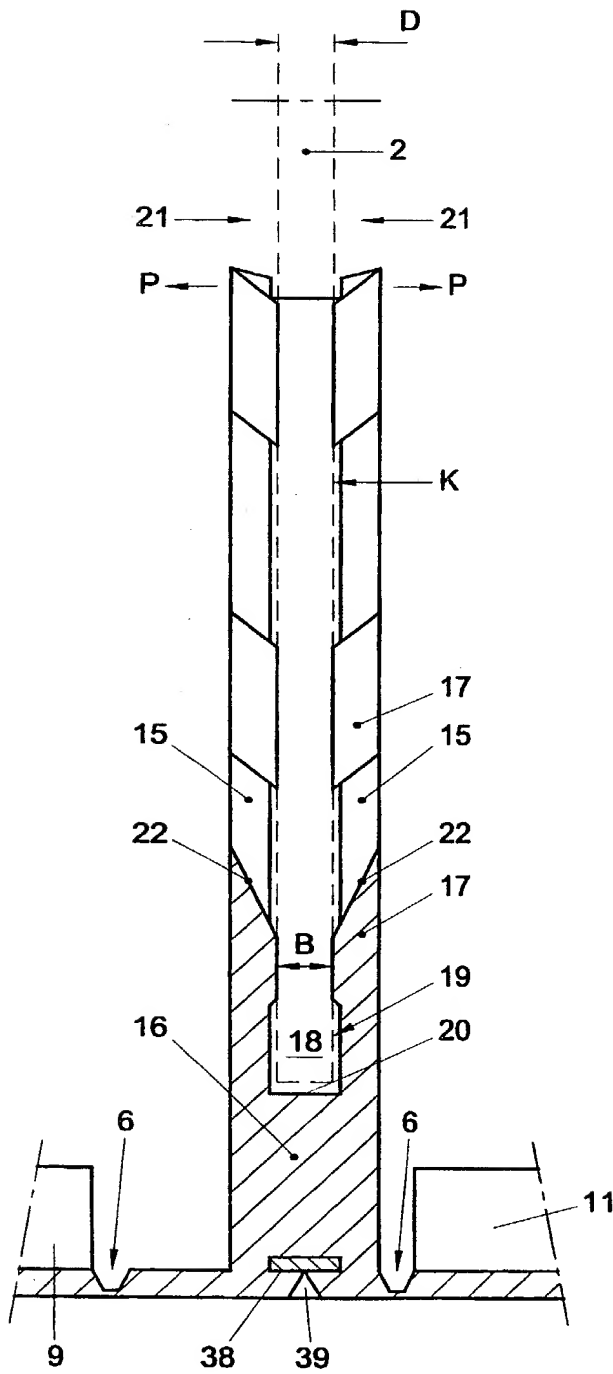


Fig. 2a

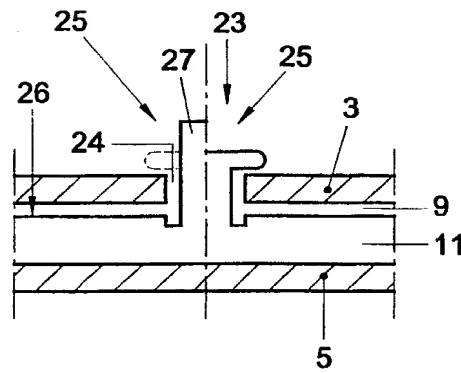


Fig. 7

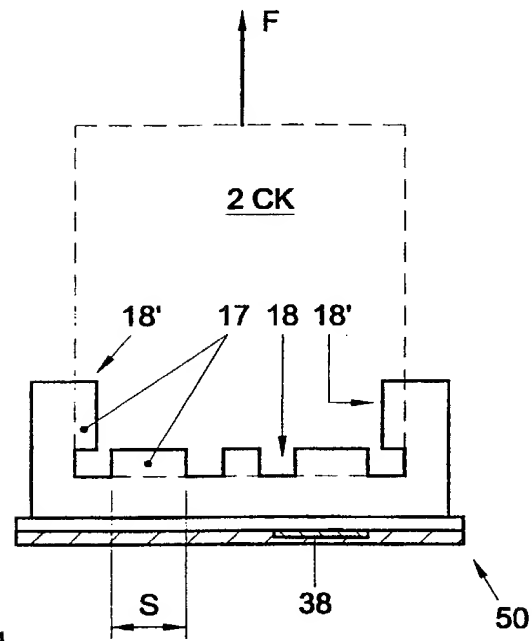


Fig. 3

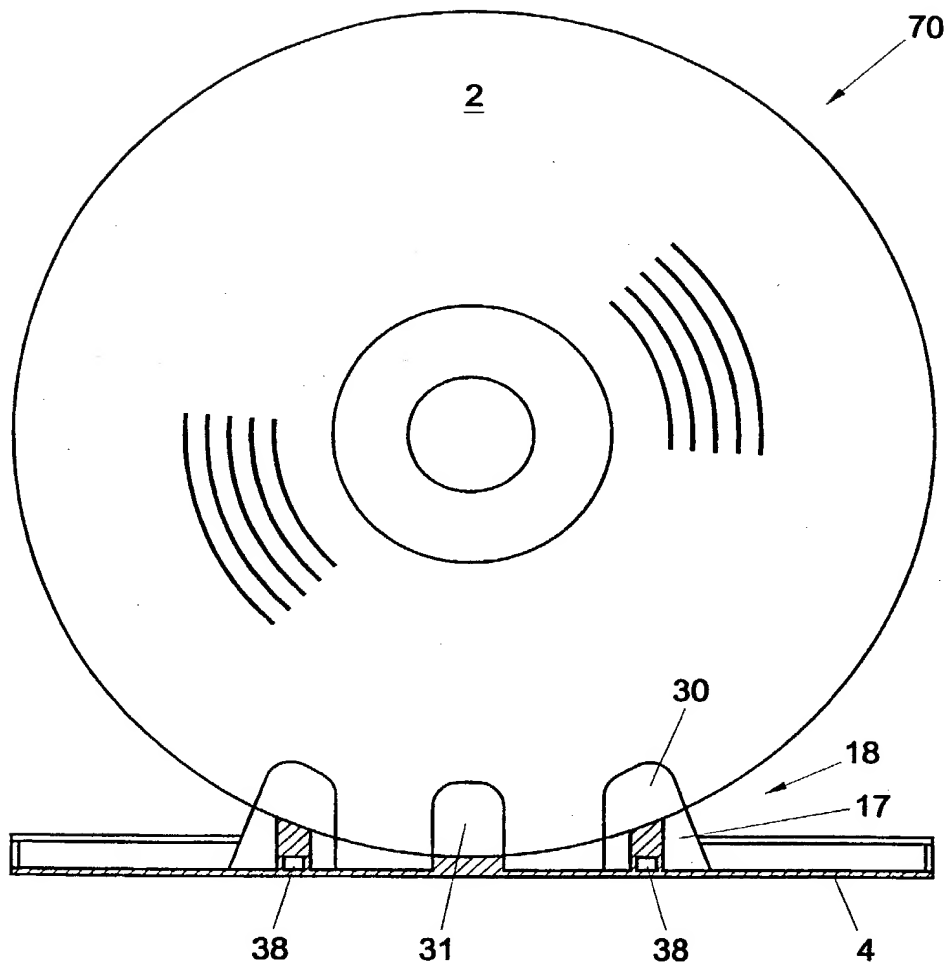


FIG. 4

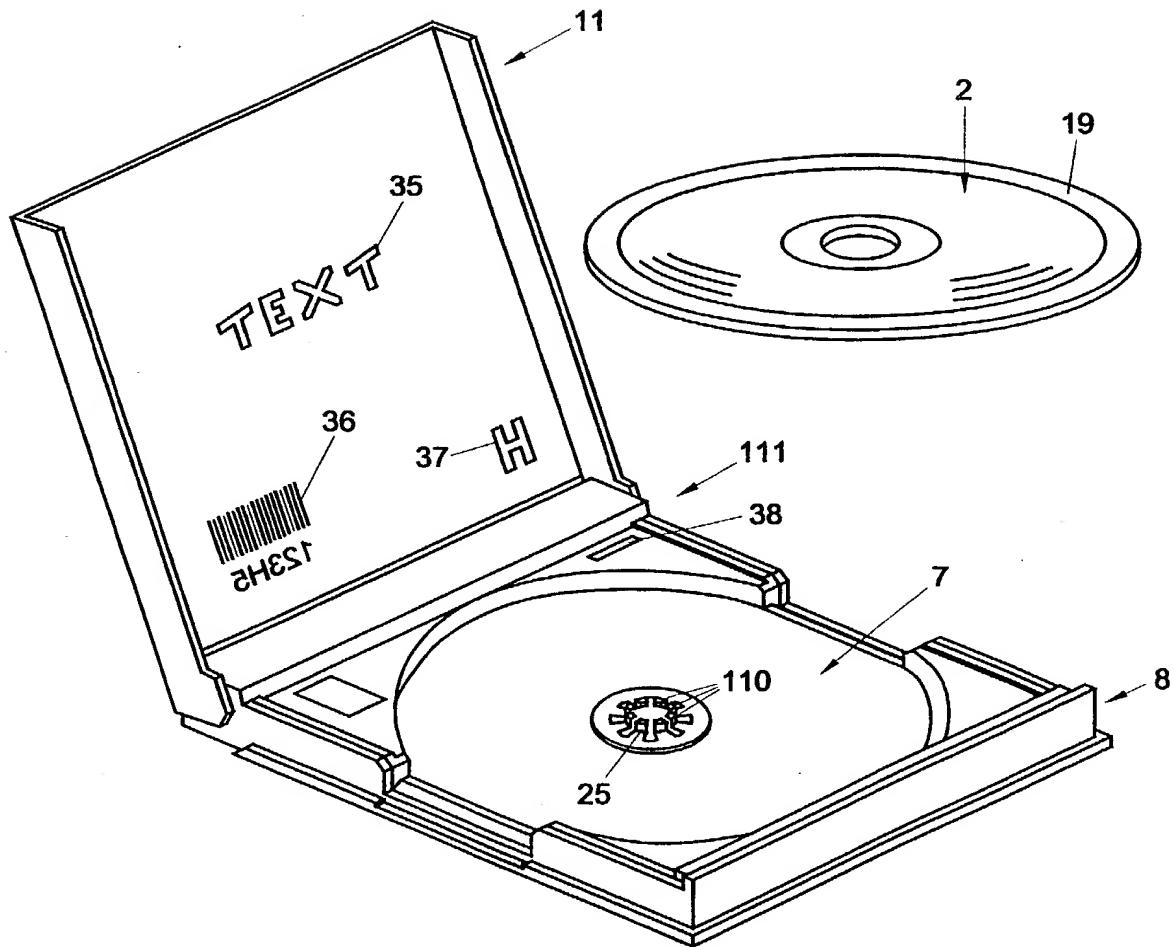


Fig. 5

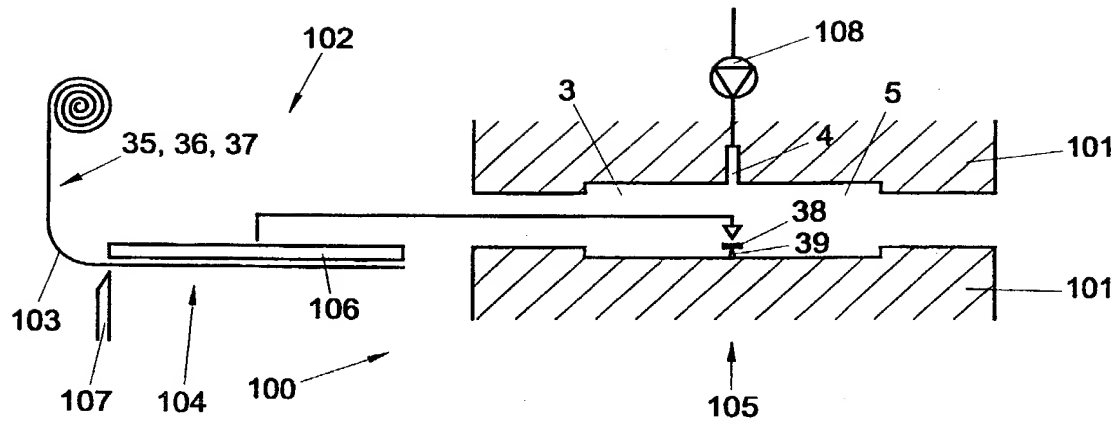


Fig. 6

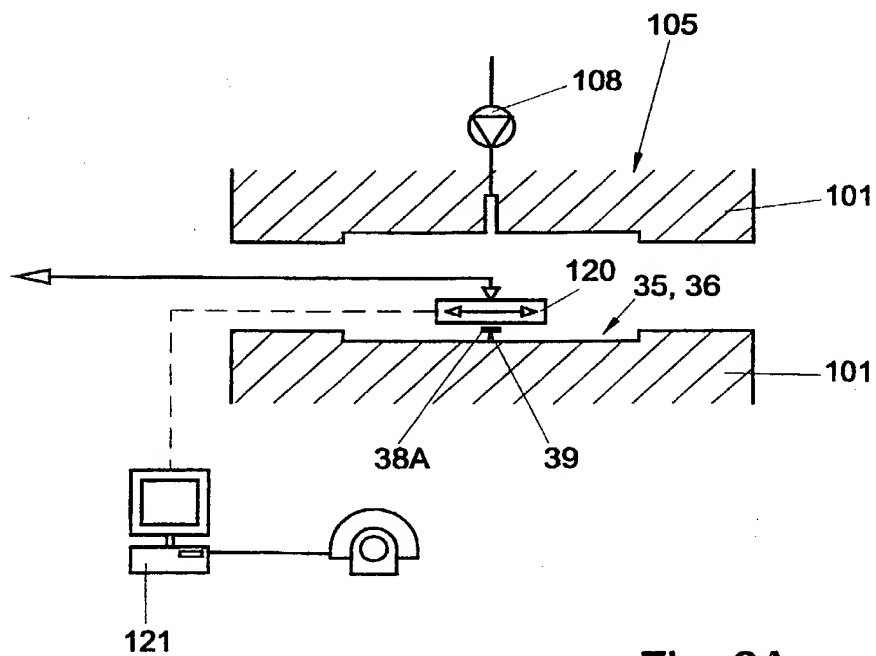
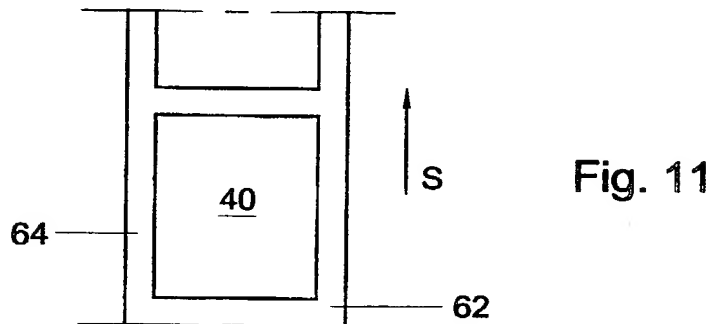
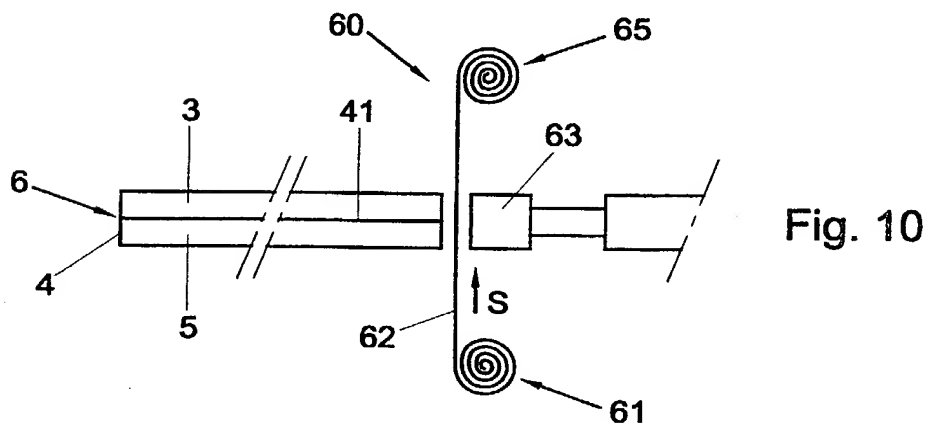
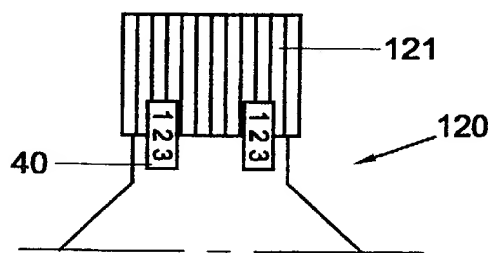
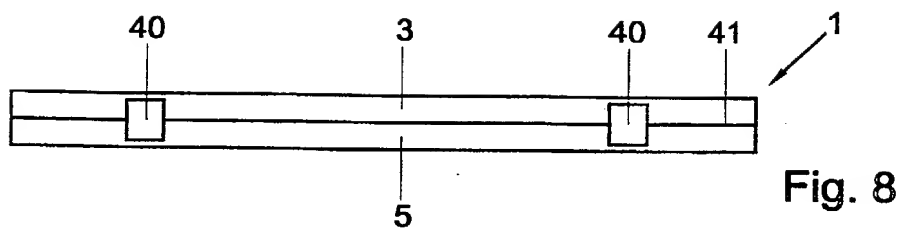
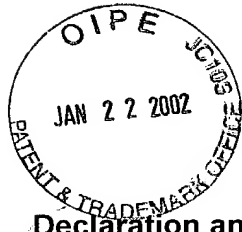


Fig. 6A





Declaration and Power of Attorney Patent Application (Design or Utility)

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled: "Storage device having protective means"

the specification of which

- ☐ is attached hereto
☒ was filed on August 17, 2001 as application serial no. 09/913,906
 and or PCT International Application number PCT/NL00/00105 and was amended
 on (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the U.S. Patent and Trademark Office all information know to me to be material to patentability as defined in 37 C.F.R. §1.56.

I hereby claim foreign priority benefits under 35 U.S.C. §119(a)-(d) or 35 U.S.C. §365(b) of any foreign application(s) for patent or inventor's certificate, or 35 U.S.C. §365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below any foreign application for patent or inventor's certificate of PCT International application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s)		
Number 1011331	Country NL	Day/Month/Year Filed 18 February 1999
Number	Country	Day/Month/Year Filed
Number	Country	Day/Month/Year Filed

I hereby claim the benefit under 35 U.S.C. §119(e) of any United States provisional application(s) listed below:

Prior Provisional Application(s)	
Serial Number	Day/Month/Year Filing Date
Serial Number	Day/Month/Year Filing Date
Serial Number	Day/Month/Year Filing Date

I hereby claim the benefit under 35 U.S.C. §120 of any United States application(s), or under 35 U.S.C. §365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. §112, I acknowledge the duty to disclose to the U.S. Patent and Trademark Office all information known to me to be material to patentability as defined in 37 C.F.R. §1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application:

Prior U.S. or International Application(s)		
Serial Number	Day/Month/Year Filed	Status (patented, pending, abandoned)
Serial Number	Day/Month/Year Filed	Status (patented, pending, abandoned)
Serial Number	Day/Month/Year Filed	Status (patented, pending, abandoned)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. §1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Power of Attorney

As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

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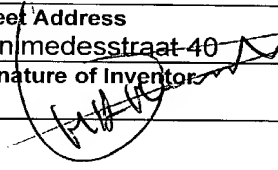
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1-0

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Signature of Inventor 		Date <u>17/9/01</u>